

IFW/94 GP 2874  
PATENT

I HEREBY CERTIFY THAT THIS CORRESPONDENCE IS BEING DEPOSITED WITH THE UNITED STATES POSTAL SERVICE WITH SUFFICIENT POSTAGE AS FIRST CLASS MAIL IN AN ENVELOPE ADDRESSED TO: ASSISTANT COMMISSIONER FOR PATENTS, P.O. BOX 1450, ALEXANDRIA, VA 22313-1450  
ON 24/9/04. BETH JOHNSON *[Signature]*

O I P E  
AUG 23 2004  
PATENT & TRADEMARK OFFICE  
**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of: Renyuan GAO et al.

Serial No.: 10/045,317 : Group Art Unit: 2874  
Filed: 7 November 2001 : Examiner: Sung H. Pak  
For: POLYMER OPTICAL WAVEGUIDES ON:  
POLYMER SUBSTRATES : Attorney Docket No.: PHX-0038

**PETITION TO AMEND INVENTORSHIP**

Applicants hereby petition to amend the inventorship of the above-referenced application ("the application") to add the name of Anthony F. Garito, a true co-inventor of the invention claimed in the application, whose name was inadvertently omitted at the time of filing the application. An affidavit by Anthony F. Garito, attesting to his role in inventorship, as well as a Supplemental Declaration from the other five (5) co-inventors, attesting to Mr. Garito's role in inventorship, are enclosed herewith. Pursuant to 37 C.F.R. 1.17(i), a check in the amount of 130.00 is enclosed.

Also enclosed, please find a written consent of the current assignee, Photon-X, LLC, to the addition of Mr. Garito as a co-inventor.

Applicant respectfully request grant of this petition and amendment of inventorship.

Respectfully Submitted,

Renyuan GAO et al.

*J. E. Maenner*  
By: Joseph E. Maenner

Reg. No. 41,964  
Monte & McGraw, P.C.  
4092 Skippack Pike P.O. Box 650  
Skippack, PA 19474  
Telephone: 610-584-9400  
Facsimile: 610-584-9783  
E-Mail: jmaenner@montemgraw.com

6 Aug 2004  
Date

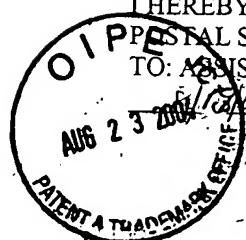
08/24/2004 BSAYASI1 00000045 10045317

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130.00 DP

Customer No. 33941

PATENT



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MAIL STOP: PETITIONS

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Serial No.: 10/045,317

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: Examiner: Sung H. Pak

For: POLYMER OPTICAL WAVEGUIDES ON:  
POLYMER SUBSTRATES

: Attorney Docket No.: PHX-0038

STATEMENT OF NEWLY ADDED INVENTOR

1. I, Anthony F. Garito, am a co-inventor of the above-captioned patent application ("the application").
2. Through clerical error, and without deceptive intent, I was inadvertently omitted as an inventor at the time of original filing of the application.
3. My contribution to the application consists of contributing subject matter to present claims 1-6, 8-15, 17-24 and 26.
4. I declare that the statements herein are true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine, or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent resulting therefrom.

02/2004  
Date

A.F.G.  
Anthony F. Garito



**SUPPLEMENTAL DECLARATION AND POWER OF ATTORNEY**  
 (Original Application)

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

**Polymer Optical Waveguides on Polymer Substrates**

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I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to herein.

I acknowledge the duty to disclose information which is material to patentability in accordance with Title 37, Code of Federal Regulations, Section 1.56.

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**FOREIGN PRIORITY APPLICATION(S)**

			Priority Claimed [ ] Yes [ ] No
(Number)	(Country)	(Day/month/year filed)	Priority Claimed [ ] Yes [ ] No
			[ ] Yes [ ] No
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(Application No.)	(Filing Date)	[ ] Yes [ ] No
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(Application No.)	(Filing Date)	

And I hereby appoint Joseph E. Maenner, Esquire, Registration No. 41,964, as my attorney or agent with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith.

Address all correspondence to **Joseph E. Maenner, Esquire, Monte & McGraw, P.C., P.O. Box 650, 4092 Skippack Pike, Skippack, Pennsylvania 19474**. Please direct all communications and telephone calls to **Joseph E. Maenner** at 610-584-9400.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Full name of sole  
inventor, if any Renyuan Gao

Inventor's Signature Gao Renyuan

Date 2/25/64

Residence Downington, Pennsylvania 19335

Citizenship People's Republic of China

Post Office Address 214 Montpelier Drive, Downington, PA 19335

Full name of second joint  
inventor, if any Donald S. Bitting

Inventor's Signature \_\_\_\_\_

Date \_\_\_\_\_

Residence Reading, Pennsylvania 19607

Citizenship United States of America

Post Office Address 37 Rim View Lane, Reading, Pennsylvania 19607

Full name of third joint  
inventor, if any Robert M. Mininni

Inventor's Signature \_\_\_\_\_

Date \_\_\_\_\_

Residence New Hope, Pennsylvania, 18938

Citizenship United States of America

Post Office Address 3161 Creamery Road, New Hope, PA 18938

Full name of fourth joint  
inventor, if any Robert A. Norwood

Inventor's Signature \_\_\_\_\_

Date \_\_\_\_\_

Residence West Chester, Pennsylvania 19380

Citizenship United States of America

Post Office Address 114 Waterwillow Road, West Chester, Pennsylvania 19380

Full name of fifth joint  
inventor, if any Kazuya Takayama

Inventor's Signature \_\_\_\_\_

Date \_\_\_\_\_

Residence Iwaki, FUKUSHIMA 971-8146, JAPAN

Citizenship Japan

Post Office Address 23-11 Kakizkai, Miyo, Kashima-mati, Iwaki, FUKUSHIMA 971-8146  
JAPAN

Full name of sixth joint  
inventor, if any Anthony F. Garito

Inventor's Signature \_\_\_\_\_

Date \_\_\_\_\_

Residence Radnor, Pennsylvania 19087

Citizenship United States of America

Post Office Address 103 Rock Rose Lane, Radnor, Pennsylvania 19087



Attorney Docket No. PHX-0038

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(Original Application)

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Full name of sole inventor, if any Renyuan Gao

Inventor's Signature \_\_\_\_\_

Date \_\_\_\_\_

Residence Downington, Pennsylvania 19335

Citizenship People's Republic of China

Post Office Address \_\_\_\_\_

Full name of second joint inventor, if any Donald S. Bitting

Inventor's Signature Donald S. Bitting

Date 4/5/04

Residence Reading, Pennsylvania 19607

Citizenship United States of America

Post Office Address 37 Rim View Lane, Reading, Pennsylvania 19607

Full name of third joint inventor, if any Robert M. Mininni

Inventor's Signature \_\_\_\_\_

Date \_\_\_\_\_

Residence New Hope, Pennsylvania, 18938

Citizenship United States of America

Post Office Address 3161 Creamery Road, New Hope, PA 18938

Full name of fourth joint  
inventor, if any Robert A. Norwood

Inventor's Signature \_\_\_\_\_

Date \_\_\_\_\_

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Full name of fifth joint  
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Inventor's Signature \_\_\_\_\_

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JAPAN

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inventor, if any Anthony F. Garito

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Full name of sole

inventor, if any Renyuan Gao

Inventor's Signature \_\_\_\_\_

Date \_\_\_\_\_

Residence Downington, Pennsylvania 19335Citizenship People's Republic of ChinaPost Office Address 214 Montpelier Drive, Downingtown, PA 19335

Full name of second joint

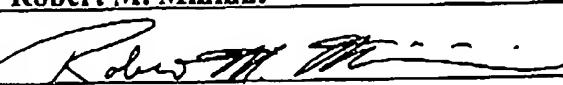
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Date \_\_\_\_\_

Residence Reading, Pennsylvania 19607Citizenship United States of AmericaPost Office Address 37 Rim View Lane, Reading, Pennsylvania 19607

Full name of third joint

inventor, if any Robert M. MininniInventor's Signature Date 20 MAY 2004Residence New Hope, Pennsylvania 18938Citizenship United States of AmericaPost Office Address 3161 Creamery Road, New Hope, PA 18938

Full name of fourth joint

inventor, if any Robert A. Norwood

Inventor's Signature \_\_\_\_\_

Date \_\_\_\_\_

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Full name of sixth joint

inventor, if any Anthony F. Garito

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Inventor's Signature \_\_\_\_\_

Date \_\_\_\_\_

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Citizenship People's Republic of China

Post Office Address \_\_\_\_\_

Full name of second joint  
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Date \_\_\_\_\_

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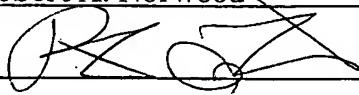
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Full name of fourth joint

inventor, if any Robert A. Norwood

Inventor's Signature 

Date

3/16/04

Residence

West Chester, Pennsylvania 19380

Citizenship

United States of America

Post Office Address

114 Waterwillow Road, West Chester, Pennsylvania 19380

Full name of fifth joint

inventor, if any Kazuya Takayama

Inventor's Signature

Date

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Japan

Post Office Address

23-11 Kakizkai, Miyo, Kashima-mati, Iwaki, FUKUSHIMA 971-8146  
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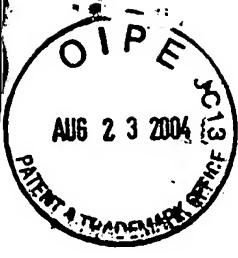
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Inventor's Signature Kazuya Takayama

Date Feb. 28, 2004

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(Application No.)	(Filing Date)	

And I hereby appoint Joseph E. Maenner, Esquire, Registration No. 41,964, as my attorney or agent with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith.

Address all correspondence to **Joseph E. Maenner, Esquire, Monte & McGraw, P.C., P.O. Box 450, 4092 Skippack Pike, Skippack, Pennsylvania 19474**. Please direct all communications and telephone calls to **Joseph E. Maenner** at 610-584-9400.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Full name of sole  
inventor, if any Renyuan Gao

Inventor's Signature \_\_\_\_\_

Date \_\_\_\_\_

Residence Downington, Pennsylvania 19335

Citizenship People's Republic of China

Post Office Address \_\_\_\_\_

Full name of second joint  
inventor, if any Donald S. Bitting

Inventor's Signature \_\_\_\_\_

Date \_\_\_\_\_

Residence Reading, Pennsylvania 19607

Citizenship United States of America

Post Office Address 37 Rim View Lane, Reading, Pennsylvania 19607

Full name of third joint  
inventor, if any Robert M. Mininni

Inventor's Signature \_\_\_\_\_

Date \_\_\_\_\_

Residence New Hope, Pennsylvania, 18938

Citizenship United States of America

Post Office Address 3161 Creamery Road, New Hope, PA 18938

Full name of fourth joint  
inventor, if any Robert A. Norwood

Inventor's Signature \_\_\_\_\_

Date \_\_\_\_\_

Residence West Chester, Pennsylvania 19380

Citizenship United States of America

Post Office Address 114 Waterwillow Road, West Chester, Pennsylvania 19380

Full name of fifth joint  
inventor, if any Kazuya Takayama

Inventor's Signature \_\_\_\_\_

Date \_\_\_\_\_

Residence Iwaki, FUKUSHIMA 971-8146, JAPAN

Citizenship Japan

Post Office Address 23-11 Kakizkai, Miyo, Kashima-mati, Iwaki, FUKUSHIMA 971-8146  
JAPAN

Full name of sixth joint  
inventor, if any Anthony F. Garito

Inventor's Signature A. F. G. - fo

Date 022604

Residence Radnor, Pennsylvania 19087

Citizenship United States of America

Post Office Address 103 Rock Rose Lane, Radnor, Pennsylvania 19087

PATENT

O I P F  
I HEREBY CERTIFY THAT THIS CORRESPONDENCE IS BEING DEPOSITED WITH THE UNITED STATES  
POSTAL SERVICE WITH SUFFICIENT POSTAGE AS FIRST CLASS MAIL IN AN ENVELOPE ADDRESSED  
TO: ASSISTANT COMMISSIONER FOR PATENTS, P.O. BOX 1450, ALEXANDRIA, VA 22313-1450 ON  
8/19/04 BETH JOHNSON *Certified*

AUG 23 2004



MAIL STOP: PETITIONS

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Renyuan GAO et al.

Serial No.: 10/045,317

: Group Art Unit: 2874

Filed: 7 November 2001

: Examiner: Sung H. Pak

For: POLYMER OPTICAL WAVEGUIDES ON:  
POLYMER SUBSTRATES

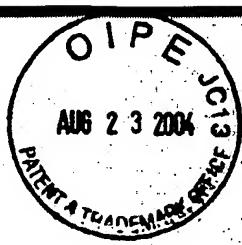
: Attorney Docket No.: PHX-0038

**CONSENT OF ASSIGNEE TO CORRECT INVENTORSHIP**

Photon-X, LLC, the Assignee of the above-referenced patent application ("the application"), hereby consents to the correction of inventorship of the application, adding Anthony F. Garito as a co-inventor. Photon-X, LLC is the present Assignee of the application, as evidenced by the enclosed Assignment documents, in which the originally listed inventors assigned all rights to Photon-X, Inc.; and in which Photon-X, Inc. assigned all rights to Photon-X, LLC.

022004  
Date

*A.F.G.* *to*  
Anthony F. Garito  
President/CEO



## SCHEDULE A

### ISSUED UNITED STATES PATENTS

Patent No.	Filing Date	Issuance Date	Title
5,940,567	2/20/98	8/17/99	Optical fibers having an inner core and an outer core
6,292,292	2/18/00	09/18/01	Rare earth polymers, optical amplifiers and optical fibers
D463,414		09/24/02	Optical amplifier
6,473,551	11/28/01	10/29/02	Thin film optical waveguides
6,483,978	6/8/01	11/19/02	Compact optical amplifier module
6,507,430	6/25/01	01/14/03	Long wavelength optical amplifier
6,538,805	11/28/00	03/25/03	Codopant polymers for efficient optical amplification
6,574,393	11/27/01	06/03/03	Compact optical fiber amplifier module
D476,977		07/08/03	Optical amplifier
6,603,597	6/8/01	08/05/03	Dual mode programmable optical logarithmic amplifier driver
6,603,917	11/7/01	08/05/03	Planar optical waveguide with core barrier
6,631,228	9/10/02	10/07/03	The adhesive free bonding method of fiber attachment for polymer optical waveguide on polymer substrate
6,650,818	6/8/01	11/18/03	Rare earth doped optical waveguide with optimal bending curves

### PUBLISHED, BUT NOT ISSUED, UNITED STATES PATENTS

Publication No.	Filing Date	Pub Date	Title
20020081069	6/8/01	06/27/02	Optical fiber transmission systems with suppressed light scattering
20020186949	10/4/01	12/12/02	Integrated rare earth doped optical waveguide amplifier array
20020186458	6/8/01	12/12/02	Dynamically controlled optical amplifier module
20030035643	8/14/02	02/07/03	Structure for attaching an optical fiber to a planar waveguide and method thereof
20030031446	8/8/01	02/13/03	Freestanding athermal polymer optical waveguide
20030026577	12/4/01	02/13/03	Method of fabricating polymer optical channel waveguides with multiple types of waveguide core materials
20030063372	9/26/02	04/03/03	Long wavelength optical amplifier
2003067945	10/9/02	04/10/03	Tunable optical waveguide laser using rare earth dopants
20030068130	10/9/02	04/10/03	Dynamic gain equalization filters based on polymer

			optical waveguide gratings
20030086679	11/7/01	05/08/03	Polymer optical waveguides on polymer substrate
			Optical polymer blends with adjustable refractive index
20030128956	3/25/02	07/10/03	and optical waveguides using same
20030133183	8/14/02	07/17/03	Ultra-bandwidth optical amplifier
20030174964	1/6/03	09/18/03	Lens coupling fiber attachment for polymer optical waveguide on polymer substrate
20030202770	1/3/03	10/30/03	Optical waveguide amplifier

#### **PUBLISHED INTERNATIONAL PATENT APPLICATIONS**

<u>Intl Pub No</u>	<u>Filing Date</u>	<u>Pub Date</u>	<u>Title</u>
WO 01/61797	3/8/00	08/23/01	Rare earth polymers, optical amplifiers and optical fibers
			Rare earth polymers, optical amplifiers and optical fibers
			Rare earth polymers, optical amplifiers and optical fibers
			Codopant polymers for efficient optical amplification
WO 01/61803	2/16/01	08/23/01	Codopant polymers for efficient optical amplification
			Codopant polymers for efficient optical amplification
			Codopant polymers for efficient optical amplification
			Codopant polymers for efficient optical amplification
WO 01/61802	2/16/01	08/23/01	Polymer blends for optical amplification
WO 02/44775	11/28/01	06/06/02	Thin film optical waveguides
			Thin film optical waveguides
			Thin film optical waveguides
			Thin film optical waveguides
WO 02/069528	2/20/02	09/06/02	Long wavelength optical amplifier
			Optical fiber transmission systems with suppressed light scattering
WO 02/069529	11/2/01	09/06/02	High gain rare earth doped phosphate glass optical amplification fibers
WO 02/097487	11/27/01	12/05/02	Compact optical amplifier module
WO 02/101431	6/6/02	12/19/02	Dual mode programmable optical logarithmic amplifier driver
WO 02/101890	6/6/02	12/19/02	Integrated rare earth doped optical waveguide array
WO 02/101891	6/6/02	12/19/02	amplifier array
WO 02/101892	6/6/02	12/19/02	Dynamically controlled optical amplifier module

## ASSIGNMENT OF PATENTS AND PATENT APPLICATIONS

THIS ASSIGNMENT OF PATENTS AND PATENT APPLICATIONS ("Patent Assignment"), is made this 31 day of December, 2003, by PHOTON-X, INC., a Pennsylvania corporation (the "Assignor"), for the benefit of PX ACQUISITION, LLC, a Delaware limited liability company (the "Assignee").

### BACKGROUND

Pursuant to an Asset Purchase Agreement, dated as of December 31, 2003 (the "Asset Purchase Agreement"), among Assignee, Assignor, Anthony F. Garito, Thomas MacAniff, Benjamin duPont and Jack Surgent, Assignee is acquiring substantially all of the assets and assuming certain of the liabilities of Assignor, and Assignor has agreed to make the assignments set forth herein.

NOW THEREFORE, in consideration of the foregoing and for good and valuable consideration set forth in the Asset Purchase Agreement, the receipt and sufficiency of which is hereby acknowledged, intending to be legally bound hereby, Assignor agrees as follows:

A. Assignor hereby irrevocably sells, assigns and transfers unto Assignee:

1. its entire right, title and interest in and to the patents and patent applications listed on Schedule A attached hereto, including all corresponding United States and foreign patents and legal equivalents thereof (such as registrations, utility models, design patents, inventor's certificates and the like), and to all patents, continuations, divisions, registrations and renewals or any reissue or reexamination resulting therefrom (hereinafter "Rights"), including the right to claim priority from, or divided out of, the Rights;
2. the inventions described in the Rights; and
3. all claims for damages by reason of past infringement of the Rights, with the right to sue for and collect the same for its own use and enjoyment, and for use and enjoyment of its successors, assigns or other legal representatives.

B. Assignor hereby covenants that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this Assignment.

C. Assignor further covenants that Assignee will, upon its request, be provided promptly with all pertinent facts and documents relating to Rights and will testify as to the same in any interference, litigation or proceeding relating thereto and will promptly execute and deliver to Assignee any and all papers, instruments or affidavits required to perfect title to, record assignment of, apply for, obtain, maintain, issue and enforce said Rights.

D. This Assignment shall inure to the benefit of Assignee and the successors and

IN WITNESS WHEREOF, Assignor has executed this Assignment of Patents and Patent Applications as of the date first above written.

PHOTON-X, INC., a Pennsylvania corporation

By: Anders Olsson

Name: Anders Olsson

Title: President & CEO

STATE OF Pa.

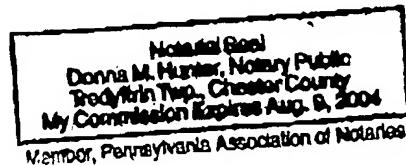
COUNTY OF Chester

On this, the 3<sup>rd</sup> day of Dec., 2003, before me Donna Hunter, the undersigned officer, personally appeared Anders Olsson, who acknowledged himself to be the President & CEO of Photon-X, Inc., and that he as such officer, being authorized to do so, executed the foregoing instrument for the purposes therein contained on behalf of said corporation and with its full authority to do so.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Donna Hunter

Notary Public



WO 02/103419	11/27/01	12/27/02 Compact optical fiber amplifier module System and method for the electronic control of a
WO 03/012942	8/5/02	02/13/03 laser diode and thermoelectric cooler System and method for the electronic control of a laser diode and thermoelectric cooler
WO 03/016968	8/18/02	02/27/03 Structure for attaching an optical fiber to a planar waveguide and method thereof
WO 03/018592	8/26/02	03/06/03 Optical gain media
WO 03/025644	9/16/02	03/27/03 Athermal polymer optical waveguide on polymer substrate
WO 03/025642	9/13/02	03/27/03 The adhesive-free bonding method of fiber attachment for polymer optical waveguide on polymer substrate
WO 03/040789	11/6/02	05/15/03 Polymer optical waveguides on polymer substrates
WO 03/044569	11/18/02	05/30/03 L-band optical amplifier
WO 03/044568	11/18/02	05/30/03 Optical amplifier with gain flattening filter
WO 03/057774	1/7/03	07/17/03 Optical polymer blends with adjustable refractive index and optical waveguides using same
WO 03/058288	1/6/03	07/17/03 Lens coupling fiber attachment for polymer optical waveguide on polymer substrate
WO 03/058368	1/8/03	07/17/03 Temperature controller module
WO 03/058776	1/8/03	07/17/03 Optical waveguide amplifiers
WO 03/066715	2/7/03	08/14/03 Nanoporous random glassy polymers
WO 03/070817	2/19/03	08/28/03 Athermal polymer nanocomposites
WO 03/079099	3/17/03	09/25/03 Magneto-optic nanocomposites
WO 03/079070	3/17/03	09/25/03 Integrated optical waveguide structures
WO 03/078304	3/17/03	09/25/03 Surface relief structures for joining and adhesion Surface relief structures for joining and adhesion
WO 03/079414	3/17/03	Optical polymer nanocomposite substrates with surface relief structures
WO 03/082884	8/26/02	10/09/03 Halogenated phosphinic acids and their active metal derivatives
		10/09/03 Halogenated phosphinic acids and their active metal derivatives
WO 03/082969	3/25/03	10/09/03 Anti-glare polymer Anti-glare polymer
WO 03/085432	4/4/03	10/16/03 Endface preparation method for polymer optical waveguides on polymer substrates
		Endface preparation method for polymer optical waveguides on polymer substrates

**FILED, BUT NEITHER PUBLISHED NOR ISSUED, UNITED STATES PATENT  
APPLICATIONS**

<b><u>App. No.</u></b>	<b><u>Filing Date</u></b>	<b><u>Title</u></b>
Provisional	09/18/00	Hybrid glass/ polymer integrated waveguide amplifiers
09/722,282	11/28/00	Polymer blends for optical amplification
09/888,881	06/25/01	Long wavelength optical amplifier Method and apparatus of fabricating graded index optical fiber
60/331,758	11/19/01	preforms High gain rare earth doped phosphate glass optical amplification
09/993,775	11/27/01	fibers
60/364,699	03/15/02	Athermal optical device
60/382,414	05/21/02	Polycarbonate U-channel
PCT/US 02/17731	06/06/02	Integrated rare earth doped optical waveguide amplifier array Fluorinated and halogenated phosphinic acids and their active metal
10/227,301	08/26/02	derivatives
10/299,471	11/18/02	Dynamic gain flattening filter
PCT/US03/0036 4	01/08/03	Optical waveguide amplifier
PCT/US03/0518	01/21/03	Optical polymer densification process and product made therefrom
PCT/US03/0263 6	01/30/03	Nanocomposite resonators
10/364,413	02/12/03	Halogenated monomers and polymers and process for making same
PCT/US03/0469 6	02/19/03	Optical polymer nanocomposites
60/364,865	03/17/03	Optical polymer nanocomposite substrates with surface relief structures
60/430,043	03/17/03	Optical polymer nanocomposite substrates with surface relief structures
Provisional	03/24/03	Clip-on multifunctional integrated optical circuits
Provisional	05/02/03	Optical waveguide amplifier having high dynamic range
Provisional	05/16/03	Polymer nanocomposite optical absorbing layers
60/380,920	05/16/03	Broadband optical amplifier based on Cr <sup>4+</sup> polymer nanocomposite Cr <sup>4+</sup> :YAG crystal strip loaded optical waveguide amplifier for
10/441,030	05/20/03	broadband optical amplification
PCT/US03/1566 7	05/20/03	Cr <sup>4+</sup> :YAG crystal strip loaded optical waveguide amplifier for broadband optical amplification
10/447,144	05/29/03	Cr <sup>4+</sup> :YAG single crystal optical waveguide amplifiers for broadband optical amplification around 1310nm



State of Delaware  
Secretary of State  
Division of Corporations  
Delivered 10:32 AM 01/09/2004  
FILED 09:31 AM 01/09/2004  
SRV 040016171 - 3742087 FILE

CERTIFICATE OF AMENDMENT  
OF  
**PX ACQUISITION, LLC**

**FIRST:** The name of the limited liability company is PX Acquisition, LLC.

**SECOND:** The Certificate of Formation of the limited liability company is hereby amended as follows:

The name of the limited liability company is Photon-X, LLC.

**THIRD:** This Certificate of Amendment shall be effective when filed.

IN WITNESS WHEREOF, the undersigned has executed this Certificate of Amendment of PX Acquisition, LLC this 7<sup>th</sup> day of January, 2003

A.F.G.  
Anthony F. Garito, Manager

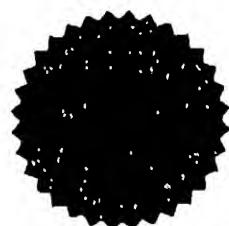


# Delaware

PAGE 1

*The First State*

I, HARRIET SMITH WINDSOR, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF AMENDMENT OF "PX ACQUISITION, LLC", CHANGING ITS NAME FROM "PX ACQUISITION, LLC" TO "PHOTON-X, LLC", FILED IN THIS OFFICE ON THE NINTH DAY OF JANUARY, A.D. 2004, AT 9:31 O'CLOCK A.M.



Harriet Smith Windsor  
Harriet Smith Windsor, Secretary of State

3742087 8100

040016171

AUTHENTICATION: 2860926

DATE: 01-09-04